Why Pursue a Graduate Degree at UTA?
The Computer Science and Engineering Department has the most graduate students in the College of Engineering and is one of the College's largest departments. CSE faculty are active in the areas of big data analytics; data mining; databases; machine learning; assistive technologies; bioinformatics; computer networks and cloud computing; computer vision and multimedia; information systems and mobile computing; machine learning and data mining; artificial intelligence and robotics; software engineering and cybersecurity; and high-performance and sustainable computing, with more than $5 million in research expenditures. Many of the programs in these areas are ranked among the top 50 in the nation by Microsoft Academic Research.

An Impactful Research University
The University of Texas at Arlington is rising in stature through its commitment to transforming the lives of students and pushing the boundaries of knowledge. Dramatic, measurable advancements continue to propel the University toward its goal of becoming one of the nation's premier research institutions. UTA is designated an R-1 Carnegie "highest research activity" institution. Research activity at the university has more than tripled to more than $85 million over the past 10 years, with increasing expertise in bioengineering, medical diagnostics, micro-manufacturing, and defense and Homeland Security technologies, among other areas. With a projected total global enrollment of close to 57,000 students, UTA is one of the largest universities in Texas. UTA is a first-choice university for students seeking a vibrant college experience. In addition to receiving a first-rate education, our students participate in a multitude of activities that prepare them to become the next generation of leaders.

An Ideal Location
UTA is located in the heart of the Dallas/Fort Worth Metroplex, the fourth-largest metropolitan area in the United States. Arlington is located between Dallas and Fort Worth and is a center for sporting events, tourism and manufacturing. The Metroplex has one of the highest concentrations of corporate headquarters in the United States, with corporations such as Texas Instruments, AT&T, Ericsson, Lockheed Martin, and many more. Also, just minutes from campus, DFW International Airport and several interstate highways allow easy access to global collaboration and commerce.

Degrees
• Ph.D. in Computer Science
• Ph.D. in Computer Engineering
• M.S. in Computer Science, Computer Engineering, and Software Engineering

Student Composition and Diversity
U.S. News and World Report rated UTA as the 5th-most diverse university in the United States in 2017. The University is an Hispanic-serving institution and is one of the 40 most popular U.S. colleges and universities for international students, based on data from the Institute of International Education's 2014-15 Open Doors Report.

How to Apply
Begin your application for graduate admission today at: uta.edu/admissions/graduate/apply.
Please be sure to check application deadlines and include all of the required application materials and fees.

Financial Assistance
All applications for admission will be also be considered for assistantships, fellowships, and scholarships. Complete your application early to take advantage of all opportunities for financial aid.

Who Hires Our Graduates?
Graduates of the department work in academia and at many companies in the region and around the country, such as Apple, Facebook, Google, HP, IBM, Intel, LinkedIn, Lockheed Martin, Microsoft, NASA, Raytheon, Sabre Holdings, Salesforce, Texas Instruments, and more.

Learn More
For more information about the Computer Science and Engineering Department, visit our website at uta.engineering/cse or contact a graduate advisor:
Sajib Datta, Ph.D. 817-272-0161 sajib.datta@uta.edu
Bahram Kahlili, Ph.D. 817-272-5407 khalili@uta.edu

Computer Science and Engineering
Big Data and Large-Scale Computing

Big data analytics and mining, cloud computing, computational journalism, data exploration, data science, distributed computing, environmental and tracking data analysis, parallel algorithms, parallel computing, scalable and distributed graph-processing, scalable memory and storage systems, scientific computing, system support for big data, warehouse-scale computing

Associated faculty:
- Ishfaq Ahmad
- Chris Ding
- Gaurav Das
- Ramez Elmasri
- Leonidas Fegaras
- Jingchun Huang
- Hong Jiang
- Song Jiang
- David Levine
- Jia Ruo
- Gergely Zaruba

Biocomputing and Health Informatics

Assistive technology, bioinformatics, computational neuroscience, computer-aided rehabilitation, health informatics, human computer interaction, medical informatics

Associated faculty:
- Chris Ding
- Junzhou Huang
- Heng Huang
- Fillia Makedon

Computer Networks

Anonymity and privacy online, context-centric networking, Internet distributed traffic control, Internet router interface programming, network function virtualization, next-generation networks, opportunistic networks, pervasive computing, secure peer-to-peer systems, sensor networks, software-defined networking, wireless networks

Associated faculty:
- Hao Che
- Chance Eary
- Yonghe Liu
- Gergely Zaruba

Computer Vision and Multimedia

Endoscopic vision, gesture recognition, human motion analysis, image processing, neural networks, pattern recognition, robotic vision, sign language recognition, signal processing, video compression, visualisation

Associated faculty:
- Ishfaq Ahmad
- Vassilis Athitsos
- Christopher Conly
- Chris Ding
- Jean Gao
- Heng Huang
- Junzhou Huang
- Farhad Kamangar
- Chris McMurrrough
- Alexandra Stefan

Database and Information Systems

Converting data to knowledge, crowd-sourcing and human computation, data modeling and summarization, data exploration, data reduction, data warehousing, database testing, deep web and social media mining, entity query, information integration, information retrieval, knowledge discovery, query processing and optimization, real-time databases, searchable file systems, spatial databases, usability challenges in querying graph data, web data management, XML

Associated faculty:
- Ishfaq Ahmad
- Gaurav Das
- Ramez Elmasri
- Leonidas Fegaras
- Jingchun Huang
- Hong Jiang
- Chengkai Li
- Fillia Makedon

Embedded Systems and Mobile Computing

Cyber-physical systems, data acquisition and control, hybrid systems, instrumentation, Internet of Things, mobile and pervasive devices and technology, mobile applications, modeling and simulation, network simulation and test bedding, real-time systems, reliable and fault tolerant computing, verification and validation, virtual reality, wireless localisation, wireless sensor networks

Associated faculty:
- Bill Carroll
- Hao Che
- Hong Jiang
- Yonghe Liu
- Chris McMurrrough
- John Robb
- Roger Walker
- Gergely Zaruba

Machine Learning and Data Mining

Deep web and social media mining, environmental and tracking data analysis, matrix-based machine learning, neural networks, pattern recognition, similarity-based indexing, social networks, spatio-temporal data analysis and mining, sparse learning, statistical and combinatorial algorithms, statistical optimization and data analysis, tensor

Associated faculty:
- Vassilis Athitsos
- Gaurav Das
- Chris Ding
- Ramez Elmasri
- Jean Gao
- Junzhou Huang
- Farhad Kamangar
- Chengkai Li
- Fillia Makedon
- Alexandra Stefan
- Carter Tiernan

Robotics and AI

Assistive robotics, autonomous robot systems, development of intelligent behaviour, endoscopic vision, healthcare robotics, robotic vision, sensor-driven robotics, surgical robotics

Associated faculty:
- Manfred Huber
- Chris McMurrrough
- Lynn Peterson
- Carter Tiernan

Security and Privacy

Anonymity and privacy online, malware analysis, mobile device security, secure peer-to-peer systems, usable security and privacy

Associated faculty:
- Chance Eary
- Yonghe Liu
- Fillia Makedon
- Jiang Ming
- John Robb

Software Engineering

Agile methods, automated software engineering, automated testing, formal methods, mobile software engineering, object-oriented software engineering, program analysis, program repair, reverse engineering, software cost estimation, software design patterns, software engineering processes, software methodology, software process, software security, testing object-oriented software, verification and validation

Associated faculty:
- Christoph Coalther
- Bahram Khalili
- David Kung
- Jeff (Yu) Lei
- Jiang Ming
- John Robb

Sustainable Computing

Define standards for power-aware hardware and software, design power efficient architectures, energy-aware computing, resource provisioning, energy-aware routing in sensor networks, evaluate power and performance tradeoff, green data center architectures, restructure software and applications, spatial indexing for sensor queries

Associated faculty:
- Ishfaq Ahmad
- Gaurav Das
- Heng Huang
- Hong Jiang
- Jia Ruo

Featured Research

Heng Huang has received multiple grants totalling more than $6 million for big data research since 2014. His projects include integration of multiple modalities of patient data to treat and combat diseases such as cancer, predicting the probability of contracting Alzheimer’s disease, treatment of depression, personalized healthcare, healthcare records analysis and security, and developing an interactive database of gene expressions of the fruit fly.

Junzhou Huang is using a National Science Foundation CAREER grant to develop computing tools that will employ multiple methods of accessing and analyzing very large, complex patient data and allow scientists and doctors to make better clinical predictions and find cures for diseases.

Fillia Makedon and Vassilis Athitsos are using artificial intelligence and an advanced computational approach to help experts assess learning difficulties in children very early in their lives through $1.27 million of a total $2.7 million National Science Foundation grant.

Hao Che, with Hong Jiang and Jeff Lei, is using a $79,950 grant from the National Science Foundation to develop a model that will make it possible for service providers to guarantee service-level objectives without unneeded resources and help cloud consumers purchase the resources that best suit their needs.

Roger Walker is leading a $671,011 Texas Department of Transportation project to assess whether scanning lasers can accurately measure microtexture of aggregates, which are used in asphalt and concrete mixtures.

Featured Research Laboratories

Database Exploration Lab:
- Directed by Junzhou Huang, the SMILE Lab focuses on developing scalable models and algorithms for data-intensive applications in medical modeling, imaging and learning using high performance computing. Of particular interest are advanced algorithms, software and systems for statistical learning, imaging informatics and computer vision with theoretical guarantees to solve practical problems involving large-scale datasets.

iSEC Lab:
- The iSec Lab, headed by Jiang Ming, works to build a secure computing environment in a hostile world. With an emphasis on security software and malware defense, the iSec Lab seeks to develop techniques to find software vulnerabilities and defeat malicious software.

Vision-Learning-Mining Lab:
- The VLM Lab, directed by Vassilis Athitsos, focuses on computer vision, machine learning, and data mining, with applications to areas such as sign language recognition, detection and tracking of complex shapes, large-scale multiclass recognition, and similarity-based retrieval and classification using large databases.

Innovative Database and Information Systems Lab:
- Directed by Chengkai Li, the IDIR Lab focuses on building large-scale human-assisting and human-assisted data and information systems with high usability, low cost and applications for social good, such as computational journalism, crowdsourcing and human computation, database exploration by ranking (top-k), skyline and preference queries, database testing, entity query, usability challenges in querying graph data, and Web data management.

Scalable Modeling and Imaging and Learning Lab:
- Directed by Junzhou Huang, the SMILE Lab focuses on developing scalable models and algorithms for data-intensive applications in medical modeling, imaging and learning using high performance computing. Of particular interest are advanced algorithms, software and systems for statistical learning, imaging informatics and computer vision with theoretical guarantees to solve practical problems involving large-scale datasets.